ENGAGING NEW PARTNERS BUILDING IMPORTANT COLLABORATIONS

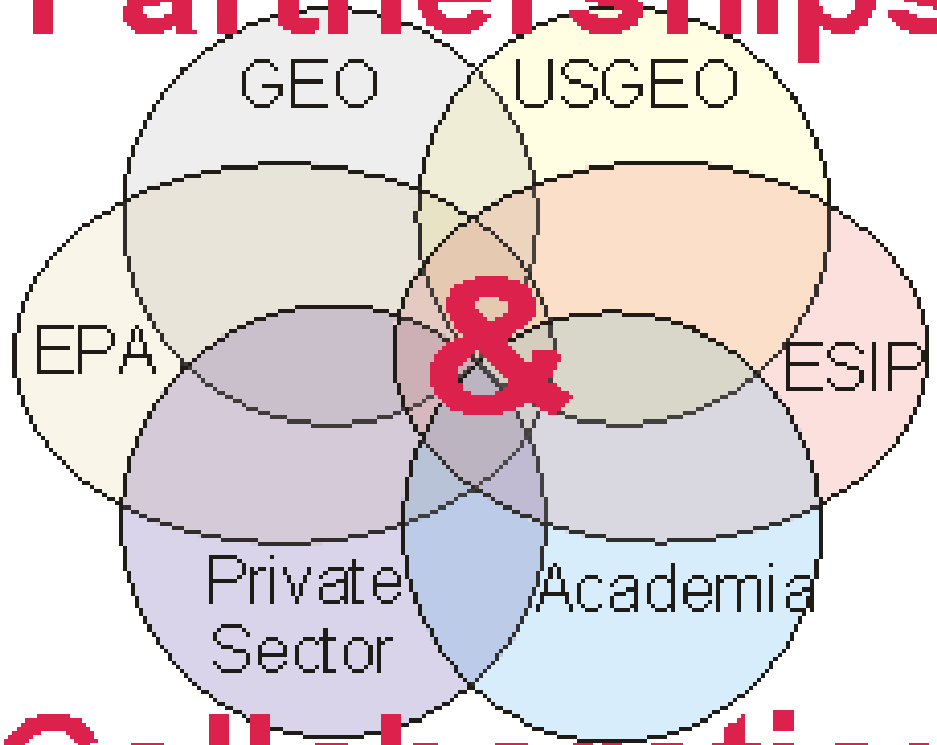
4 January 2012

Gary J. Foley, PhD

Senior Advisor to the Assistant Administrator for Research and Development

US Environmental Protection Agency

Partnerships

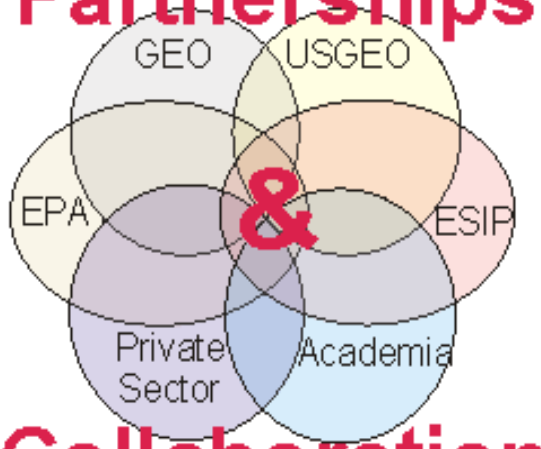


Collaboration

Data
Deliver for
Decisions

The
Public

Partnerships



Stakeholders

Global Movements

Collaboration

Sustainable
Development

Why GEOSS?

The more we understand the Earth, the better stewards we become.

Data from Providers

Societal Benefits

Interdisciplinary, Multi-disciplinary
Trans-disciplinary Collaboration

Communities Of Practice

GROUP ON EARTH OBSERVATIONS

TO

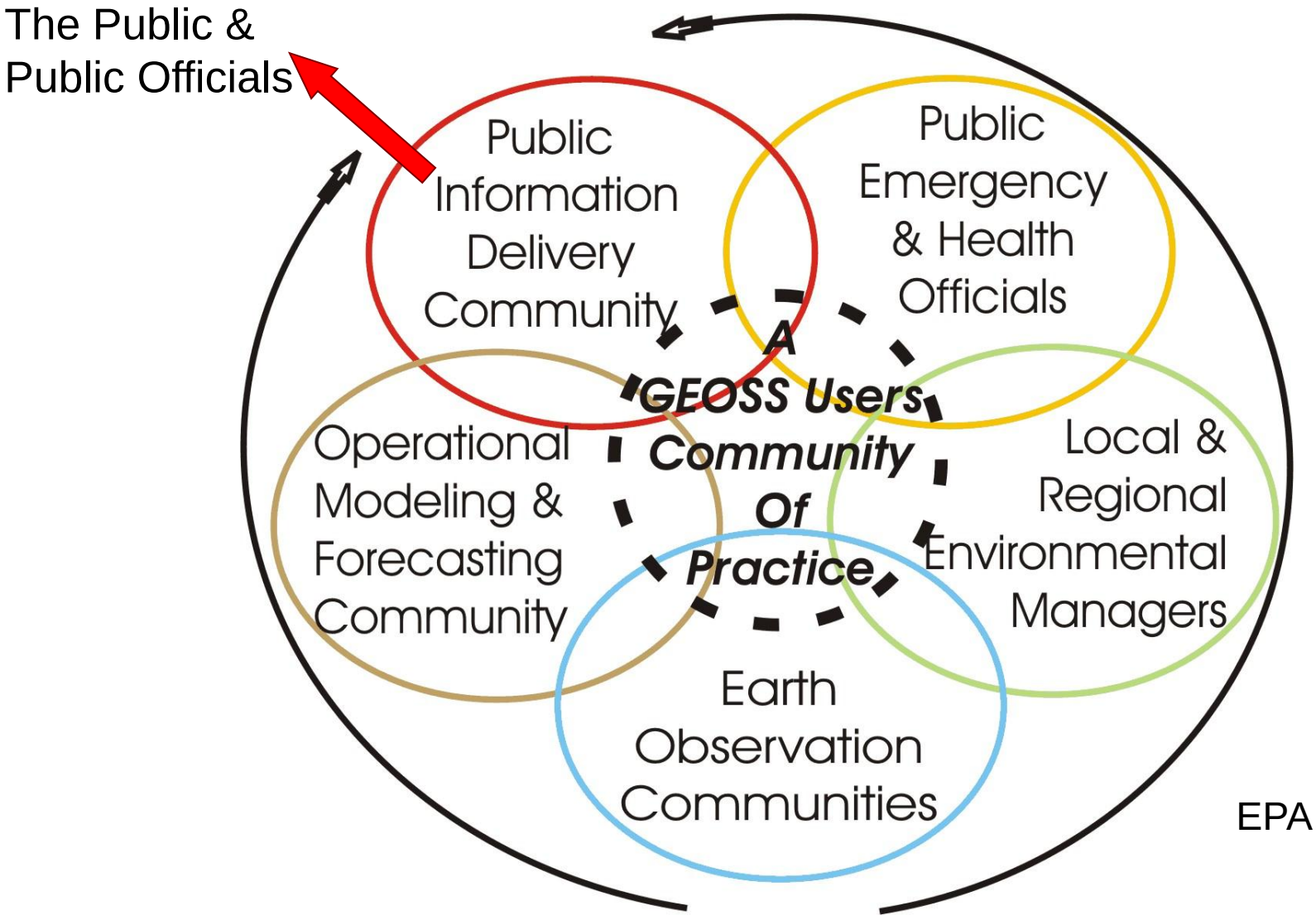
The Concept of "Community of Practice"

Groups of people who share a concern, a set of problems, or a passion about a topic and deepen their knowledge by interacting on an ongoing basis

Bring together...

- Users
- Providers
- Universities and research institutions
- Technology development actors
- Developed countries
- Developing countries

The Air Quality Community



EPA, 2005

Communities of Practive

Data Deliver for Decisions

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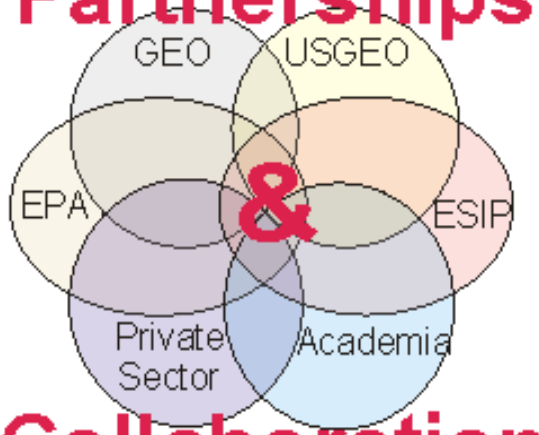


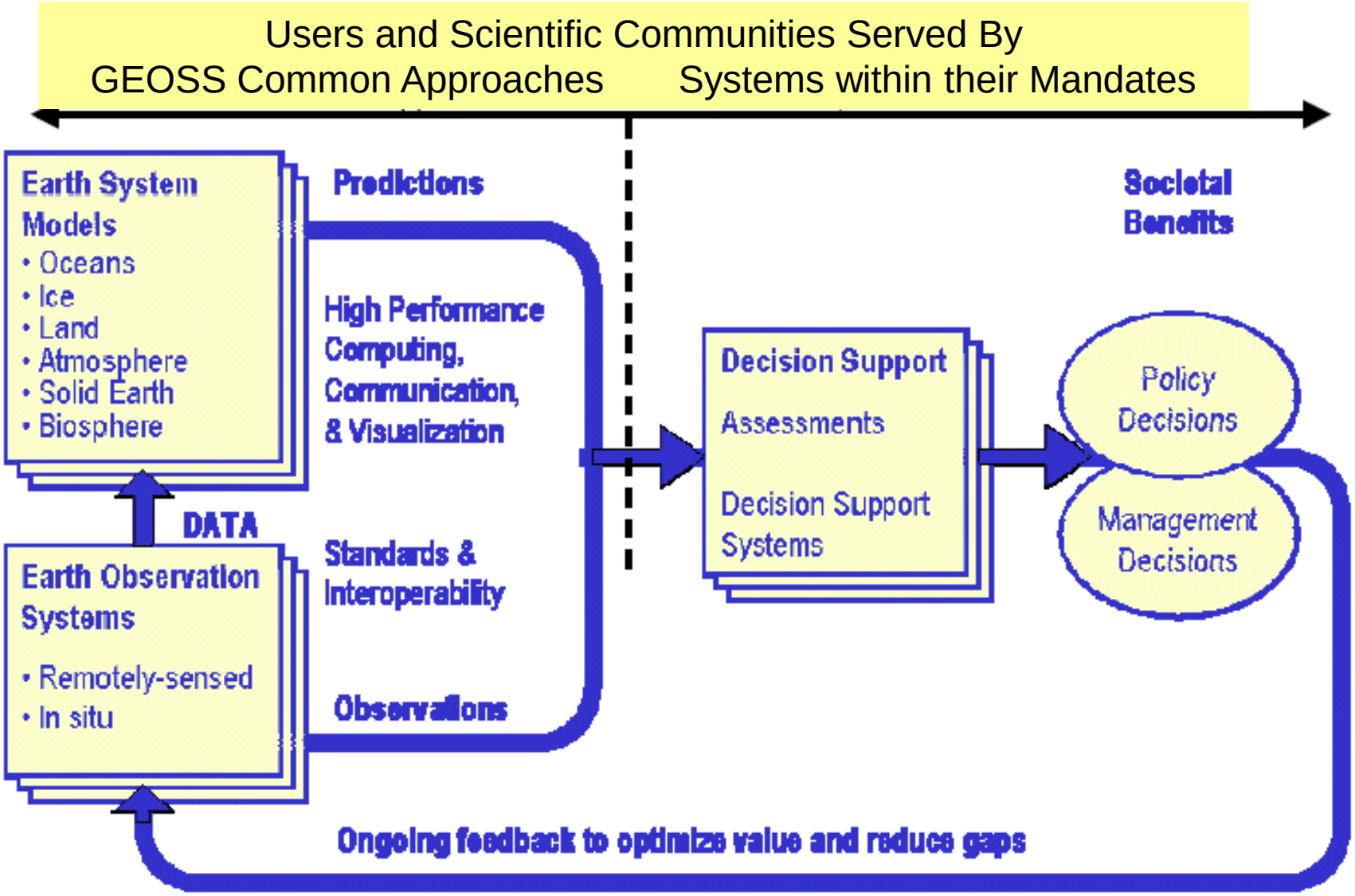
Global Movements

Collaboration

Sustainable Development

From the Concept of

With the GEOSS Architecture



To Partnerships & Collaboration Bridging Science and Policy

What do we know today?
What are the unknowns?

What are our goals?
What are the options?

Systems Model

How should we proceed given the uncertainties?

Communities of Practive

Data Deliver for Decisions

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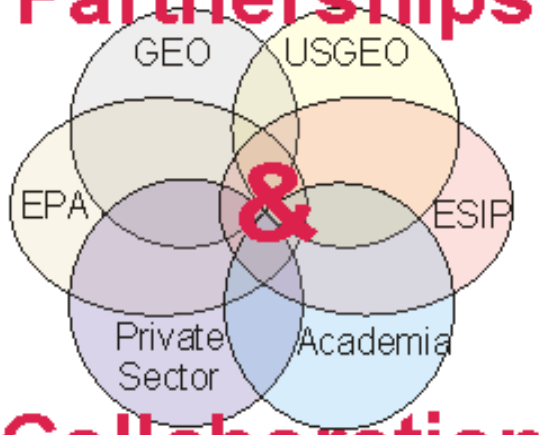

Global Movements

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Seven Priorities for EPA's Future

- Taking action on climate change
- Improving air quality
- Assuring the safety of chemicals
- **Cleaning up our communities**
- Protecting America's waters
- **Expanding the conversation on environmentalism and working for environmental justice**
- **Building strong state and tribal partnerships**

EPA Administrator
Lisa P. Jackson

Seven Priorities for EPA's Future

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COMMUNITIES

EPA Administrator
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Seven Priorities for EPA's Future

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STAKEHOLDERS

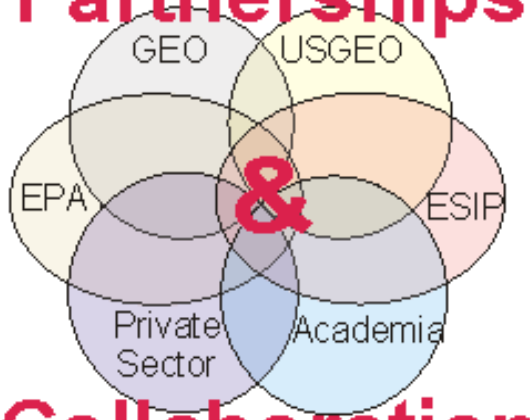
Communities of Practice

Data Deliver for Decisions

Communities

The Public

Partnerships



Stakeholders

Global Movements

Collaboration

Sustainable Development

Communities

Focusing on environmental issues that matter to communities and empowering citizens and community groups to take action to improve their health and environment.

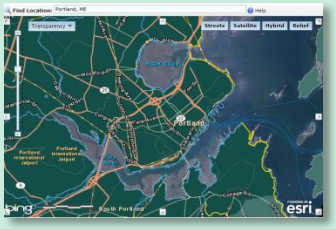
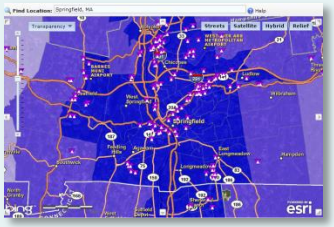
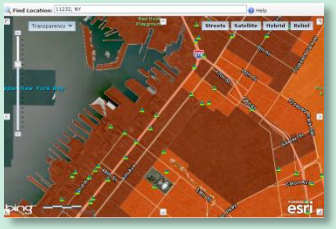
An Example

EPA's C-FERST Tool and the Lessons Learned

What is C-FERST?

Community-**F**ocused **E**xposure and **R**isk **S**creening **T**ool:

C-FERST is EPA's **GIS and information access Web tool** for conducting cumulative human exposure and risk screening assessments, **to support new decision-making by the communities** in order to become more **sustainable and healthy.**

	Portland, ME	Springfield, MA	Brooklyn, NY
Initial Issues Considered	 • outdoor air pollution • water quality • lead in old homes & soil • elevated childhood BLL • bike & pedestrian safety	 • ambient air quality • home & school IAQ • lead • health disparities	 • air quality • access to healthy affordable foods • pedestrian street safety • return of B37 bus line
Additional Issues Identified	• waste/litter • brownfields • public housing conditions • exposure to common chemicals	• debris/waste/litter • abandoned homes/ brownfields • violence • tornado damage	• waterfront access • climate adaptation • waste management • recycling in residential, business, and school settings
Local Data Collected	• turnpike traffic • ozone • green space • blight • waste collection	• school asthma rates • air pollution • water quality • brownfield sites	(in process of collecting local data)

C-FERST Stakeholders

- **EPA Groups**
  - Regional project officers
  - Regional risk assessors (e.g., Compliance & Enforcement; EJ)
  - EPA Program Office risk assessors/managers
  - CARE, OEJ, OECA, OCHP
  - RAF Cumulative Risk Tech. Panel
- **State & Local Agencies**
- **Communities & Individuals**
- **Other Federal Agencies**
  - CDC (EPHTN, CAEPH)
  - NIEHS PEHP
- **Academia**

Overarching Lessons Learned about C-FERST

C-FERST is useful for:

- **Visualizing environmental information**
- Providing content for outreach materials
- Following step-by-step community guidance interactively
- Learning about community issues of concern

C-FERST needs more:

- ***Simplification & Flexibility*** –
  Different users will use the tool for different purposes, in different order, at different levels of complexity
- ***Direction*** –
  Crosswalks could play a larger role in the directing organization/flow of the site, but need enhancements
- ***Interaction*** –
  Ability to add local data, save maps and tables, etc.
- ***Risk Science & Communication*** –
  "What does this mean to me?"
- ***Decision Support Functionality*** –
  "What if?" scenarios to inform decisions for sustainable and healthy communities

Overarching Lessons Learned
about Community Tool Development

Expectations:

Communicate, refine if needed, repeat

Easy access and user-friendliness critical to success:

***Usability & IT challenges* can make or break a public-facing tool**

Community Tool development is a balancing act:

Provide valuable information & science tools
for complex, multi-step community assessment process while also

- ***keeping it simple and streamlined***
- **avoiding bias in the process**
- **avoiding bias in the information provided**
- ***respecting community empowerment***

It's All About Decision-Making

STEWARDSHIP
Enabling better Decision-making

→

SUSTAINABILITY
The outcome of better Decision-making

" . . . the goal of sustainability is our "true north" . . ."

Dr. Paul Anastas, EPA Science Advisor and Assistant Administrator for Research and Development

Protecting America's Waters

STEWARDSHIP
Enabling better Decision-making

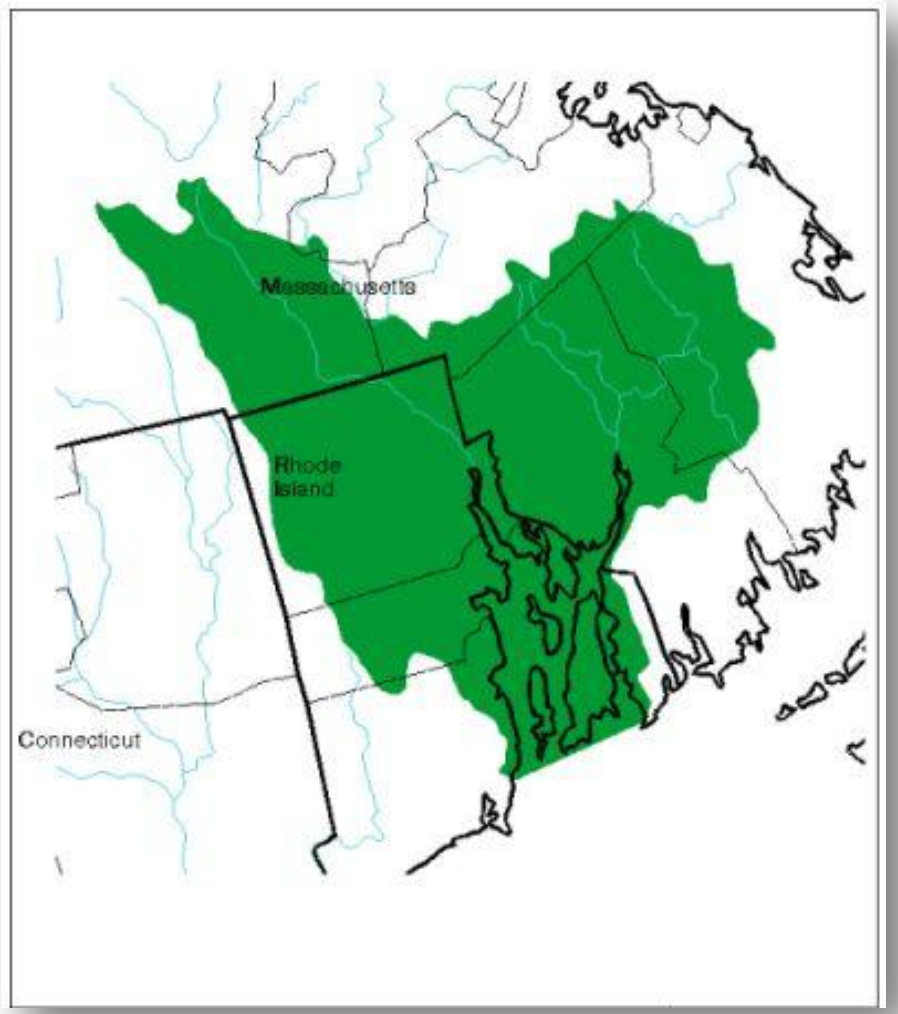
SUSTAINABILITY
The outcome of better Decision-making

Working with Stakeholders

- ***expanding the conversation on environmentalism and***
- ***building strong State and tribal partnerships***

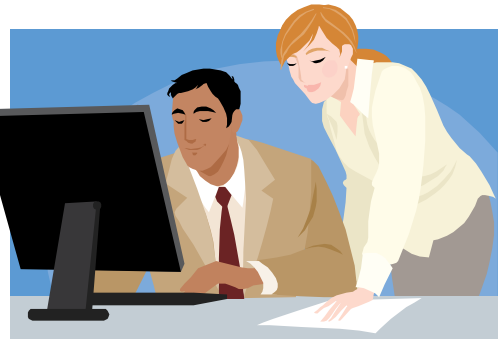
Sustainability of a Resource: Narragansett Bay

- Apply Systems Thinking
- Develop an initial version of System Dynamics modeling tool
- **Obtain stakeholder insights & feedback from the start**



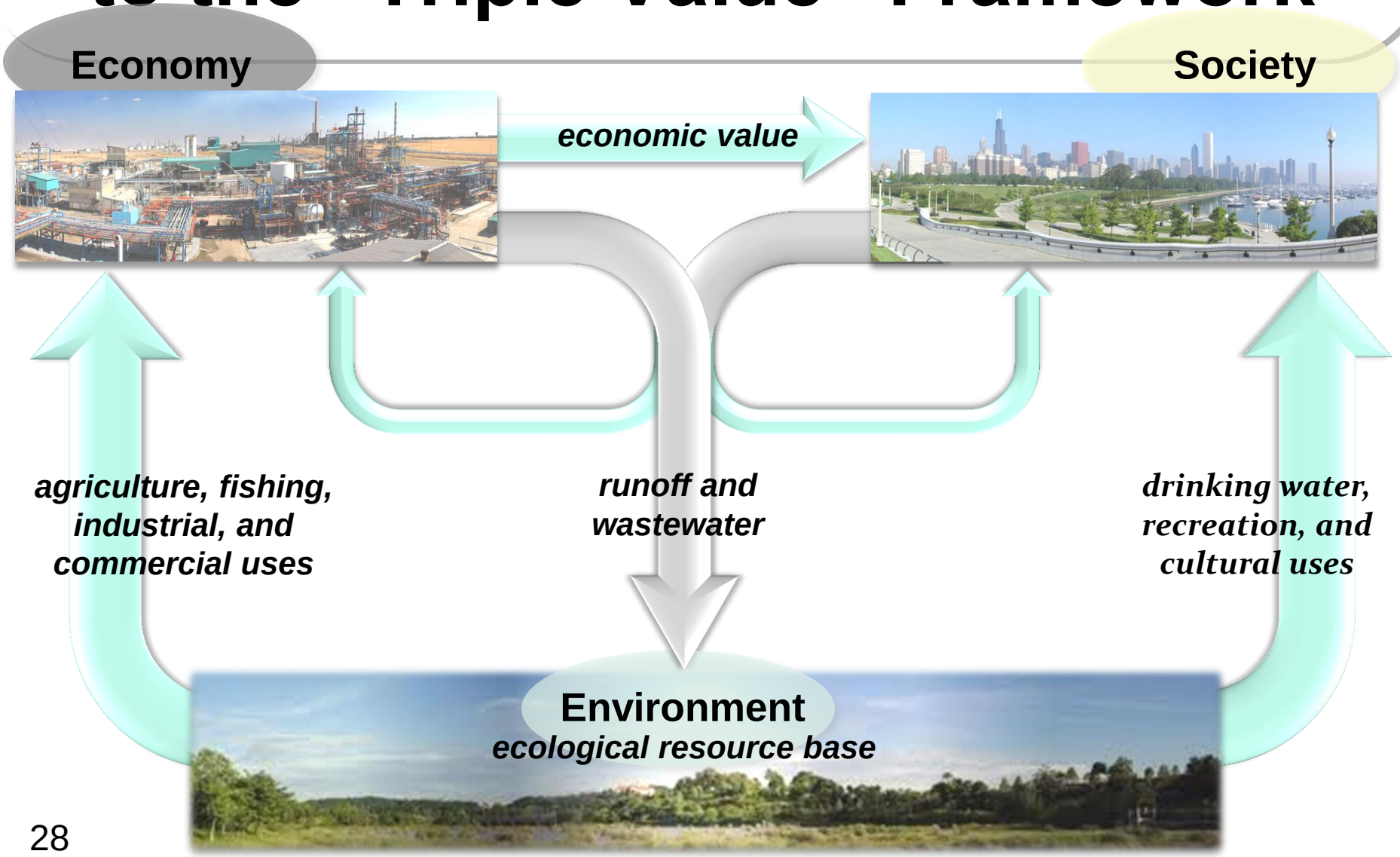
Systems Approach

- Interactive **system dynamics** model based on the **T21** platform from Millennium Institute
  - Explores how strategic options overall sustainability outcomes
  - Helps create portfolio of interventions to maximize stakeholder benefits
  - **Easy to use and understand by policy-makers and stakeholders**

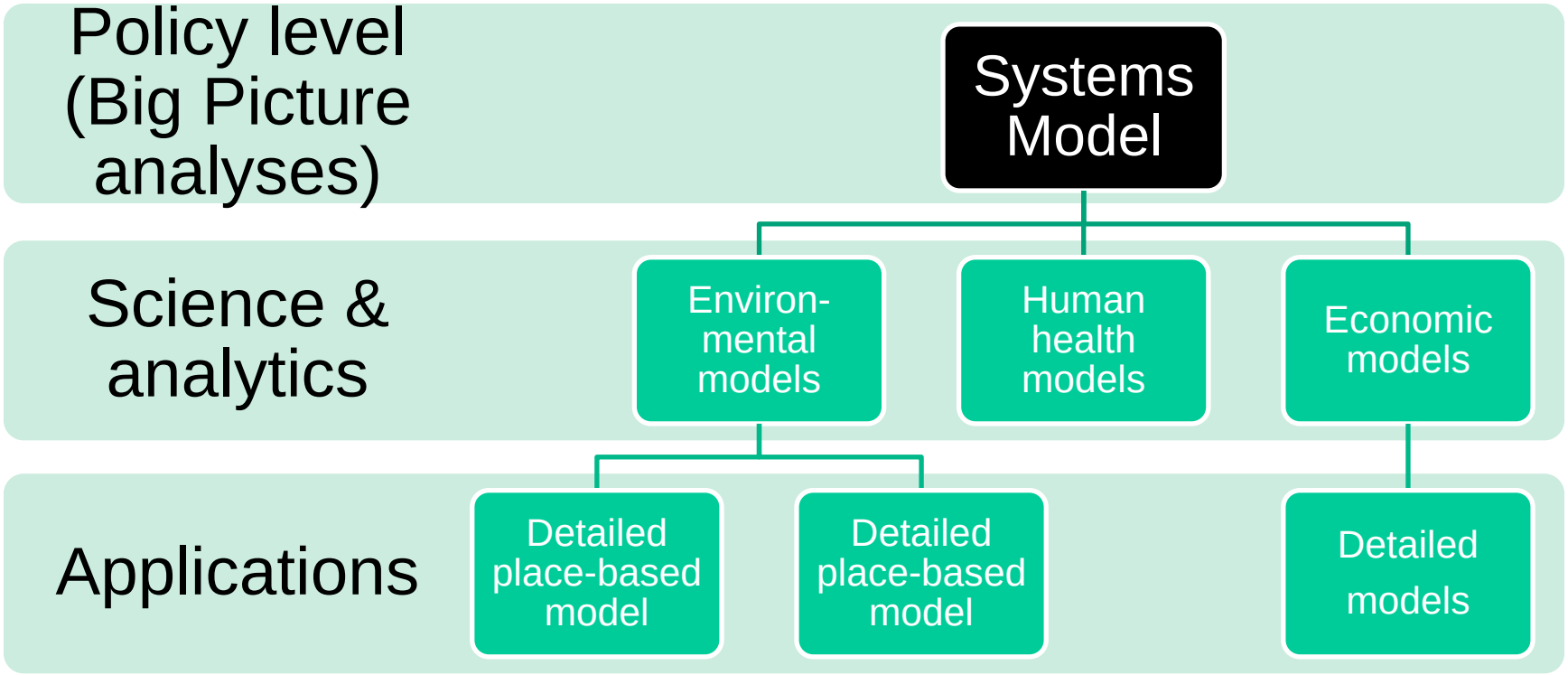


"All models are wrong, but some models are useful"

From the Pillars of Sustainability to the "Triple Value" Framework

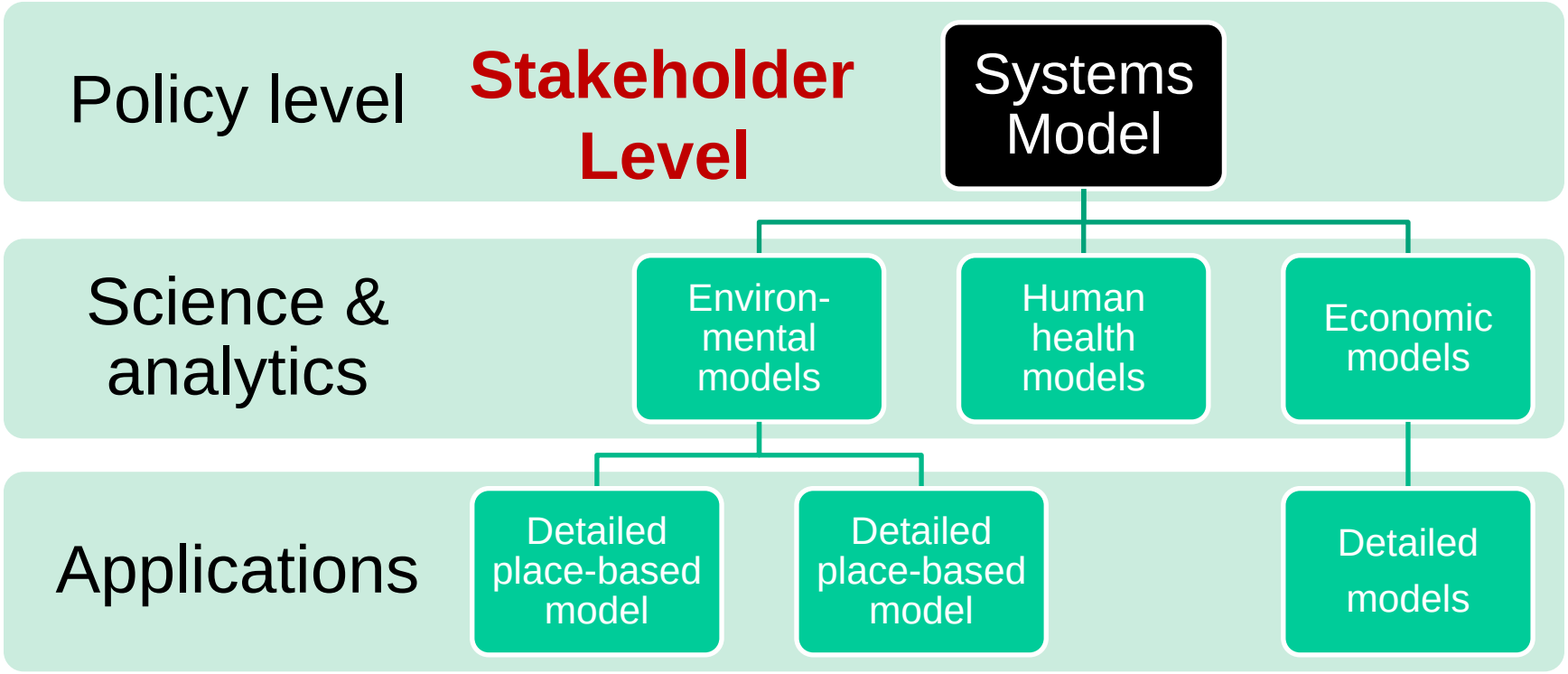


Overview of Modeling Approach



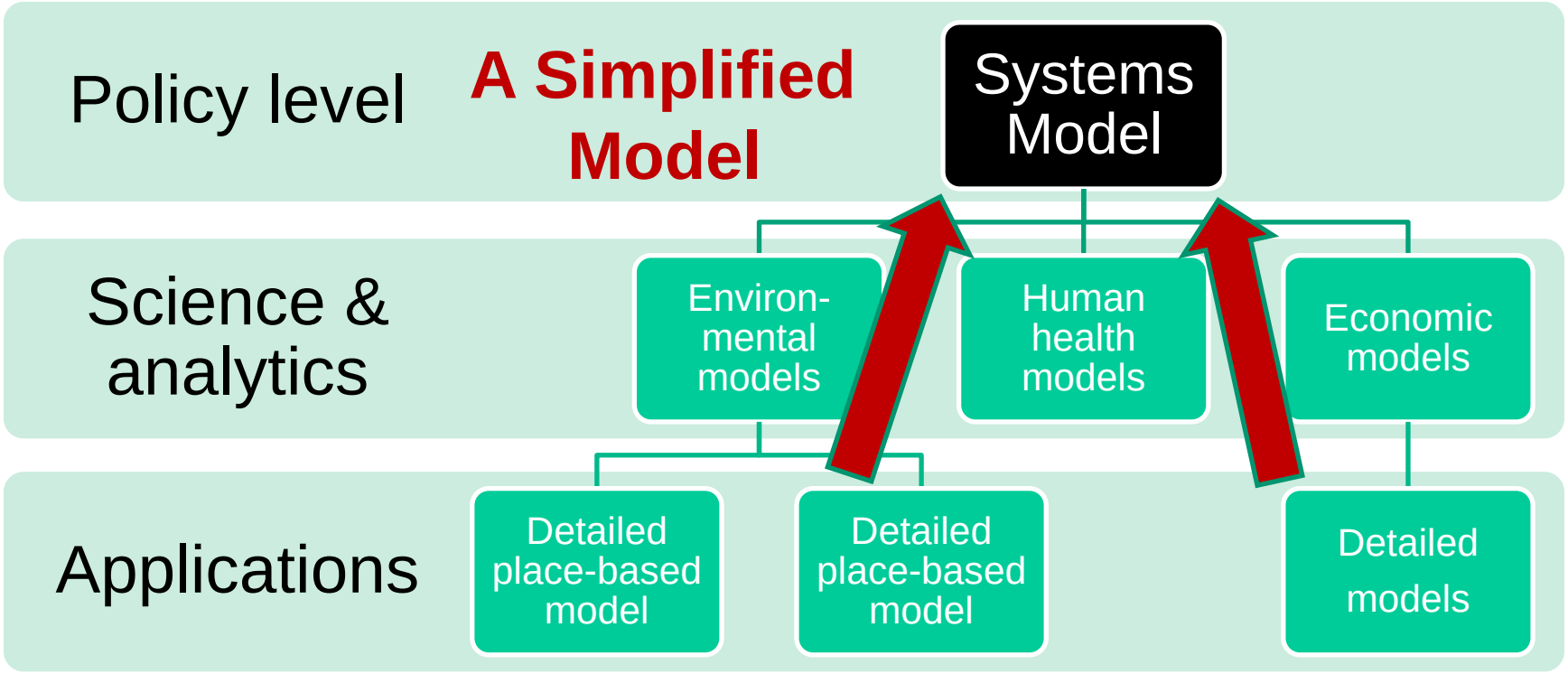
There is no single model that can address all the needs of decision makers and stakeholders at multiple scales

Overview of Modeling Approach



Shows how "INTERVENTIONS" could affect "INDICATORS" in the Big Picture!

Overview of Modeling Approach



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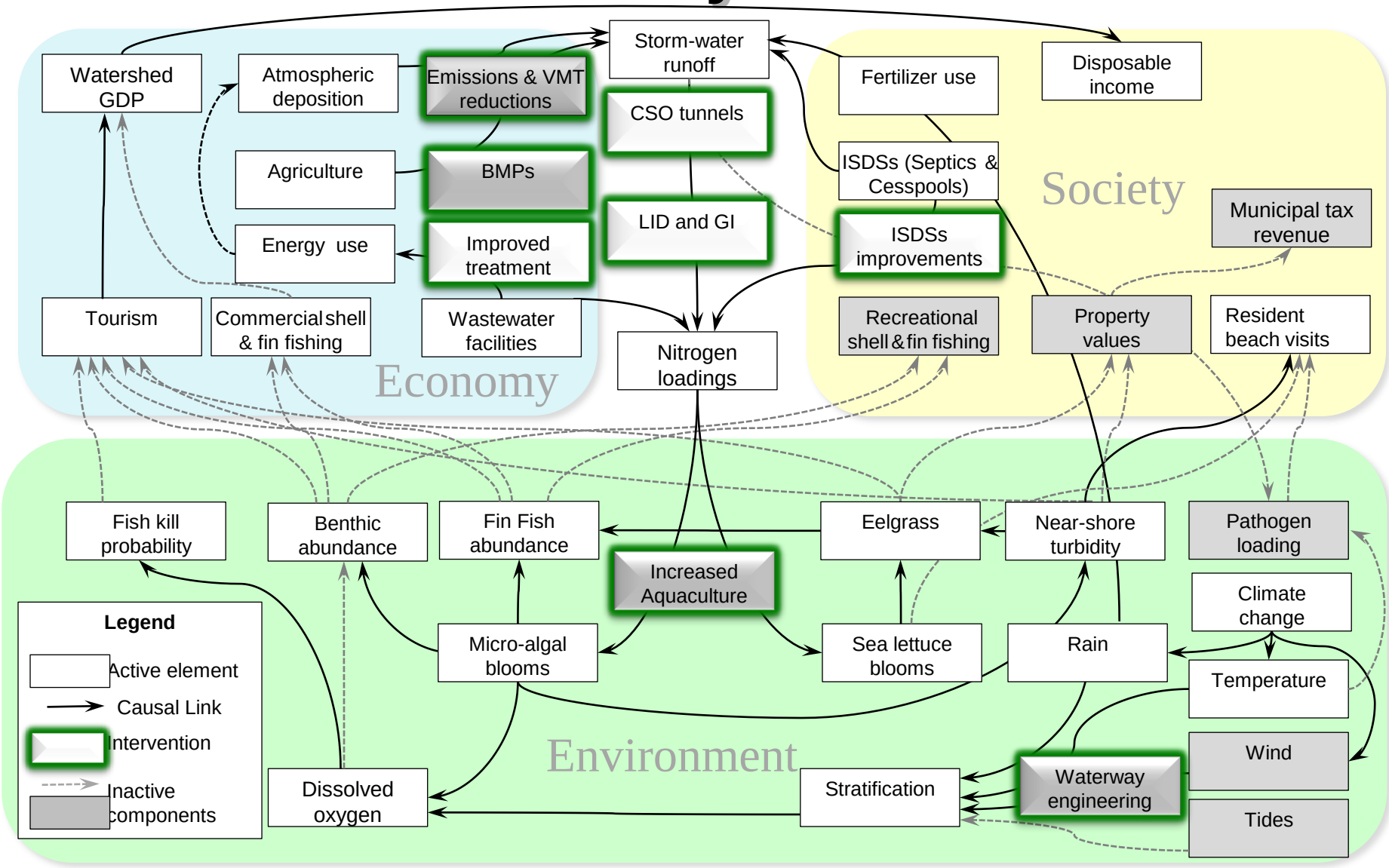
Causal Relationships for Narragansett Bay



Requires lots of data—mostly provided by Stakeholders

Communities of Practive

Data Deliver for Decisions

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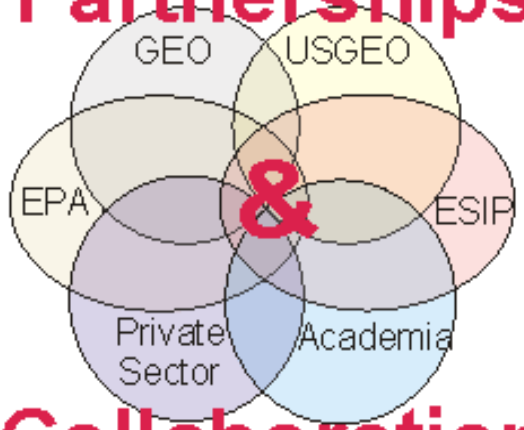
Disadvantaged, Under Served

Partnerships



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Natural Resource Sustainability for Environment, Economy & Society

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Eye on Earth Network

a new global public good

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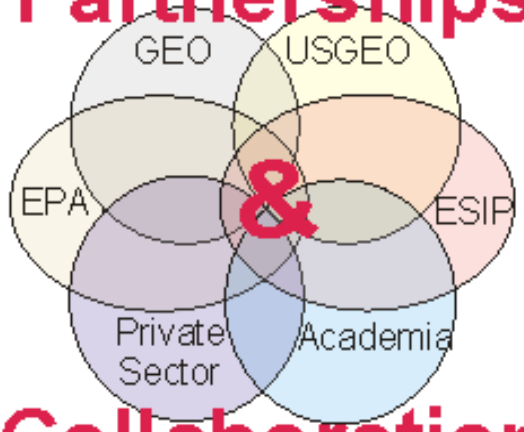

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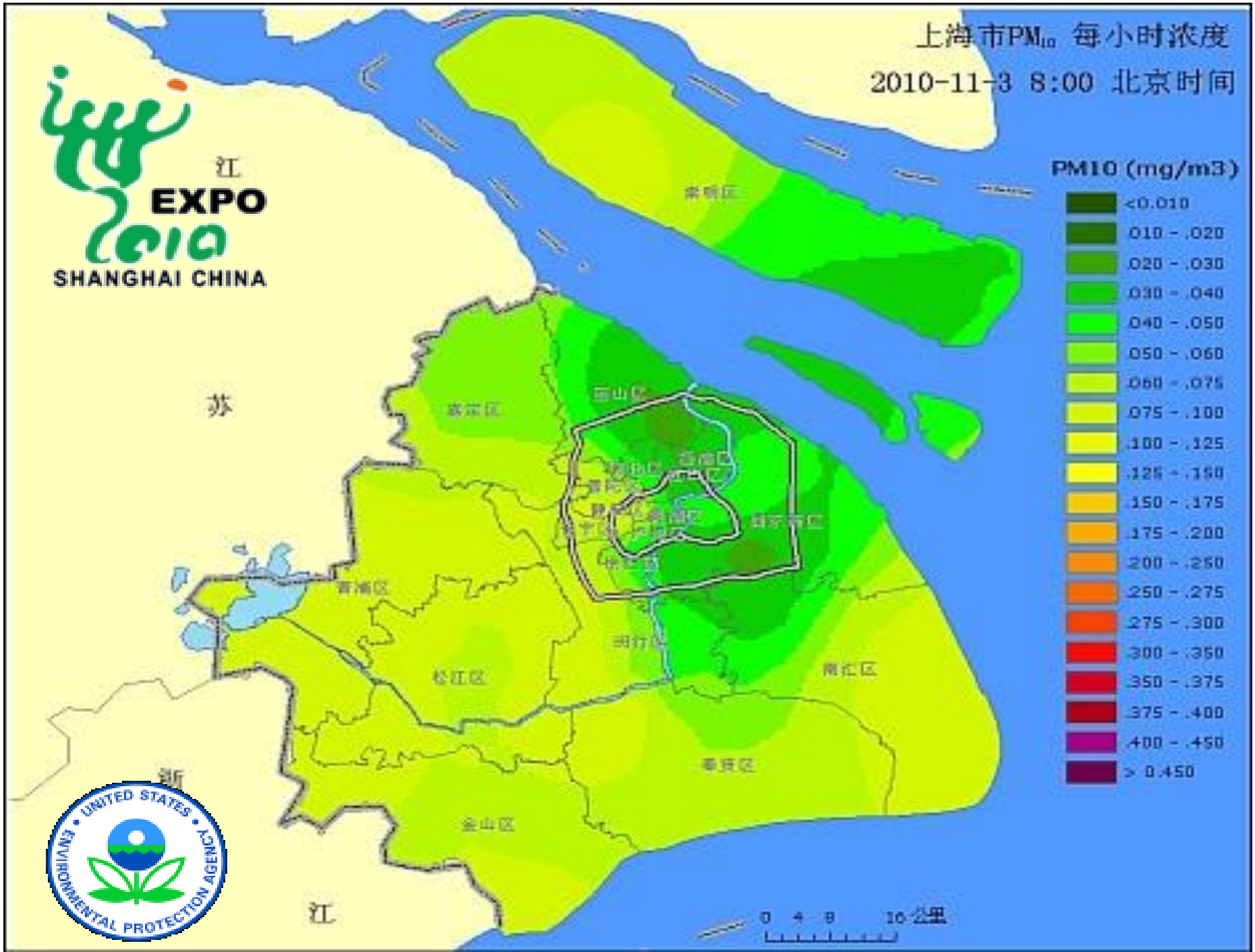
From AIRNow to "Community"

- The AIRNow experience has taught us several lessons
  - **Community is KEY – 40% technology, 60% people**
  - **The public wants real-time environmental information, but depends upon the community to interpret it**
  - **The community provides the context that lies between the data and the public**
- For sensitive subpopulations and families, AIRNow's forecasts **support "individual" adaptive management** to deal with residual AQ risk.

LIVE
CNN Weather
O3 ZONE
Oklahoma City
Dallas
San Antonio
Houston
Moderate
Unhealthy for Groups
Unhealthy
Hazardous
CNN
WWW.EPA.GOV/AIRN
3:23a PT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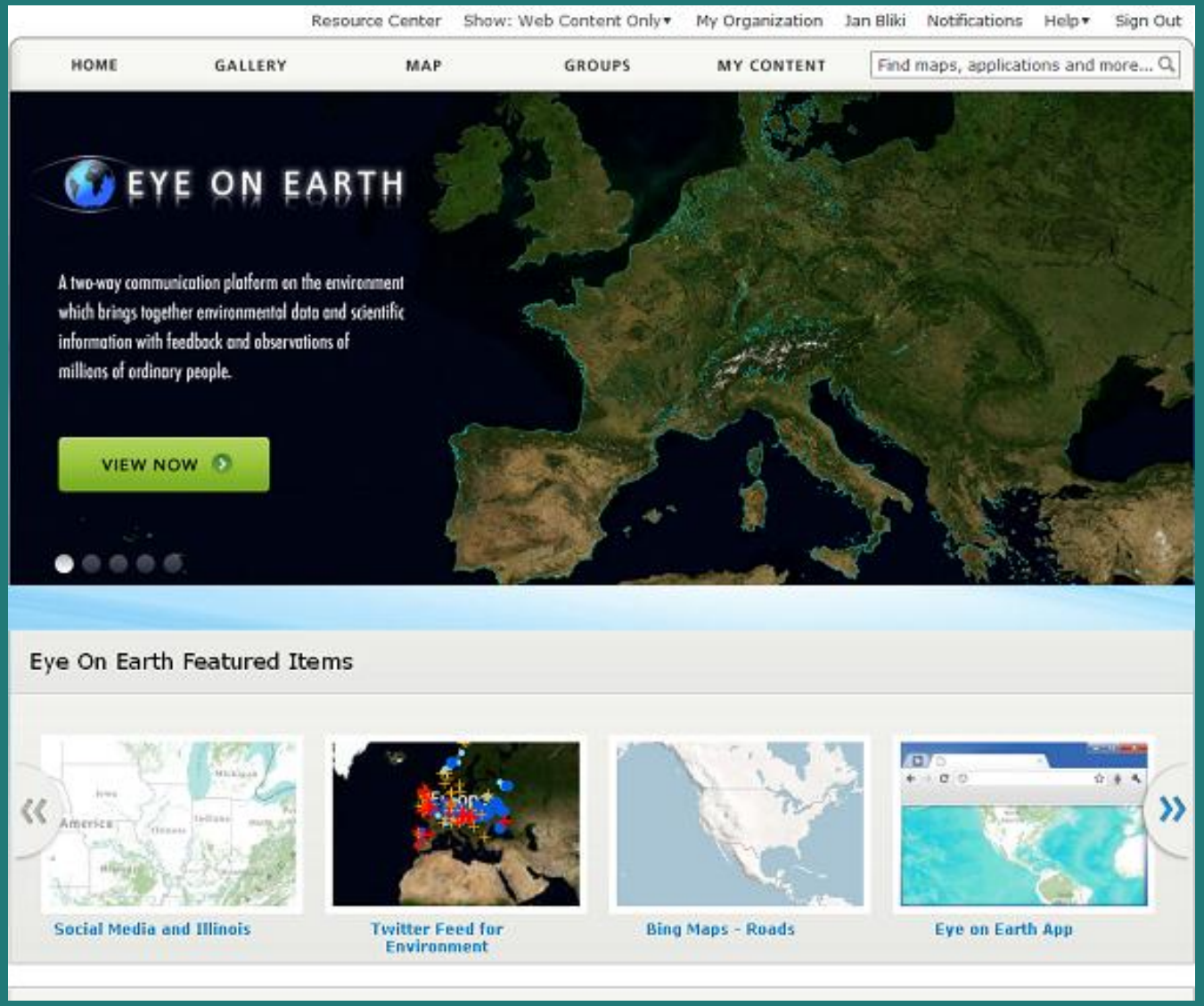
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

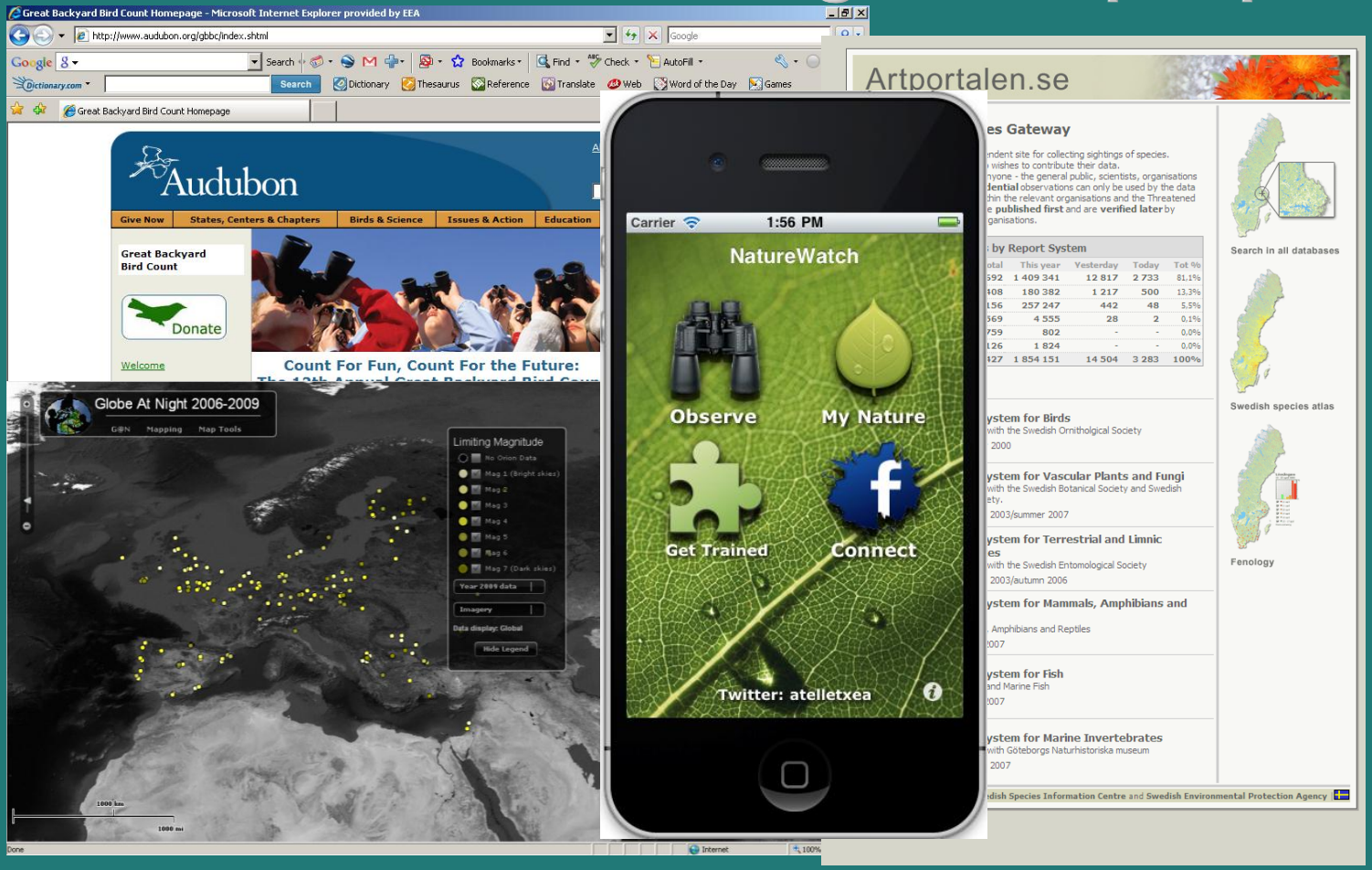
A new global public good



Real-time Air Quality, Water Quality and Noise Quality Data to the Public

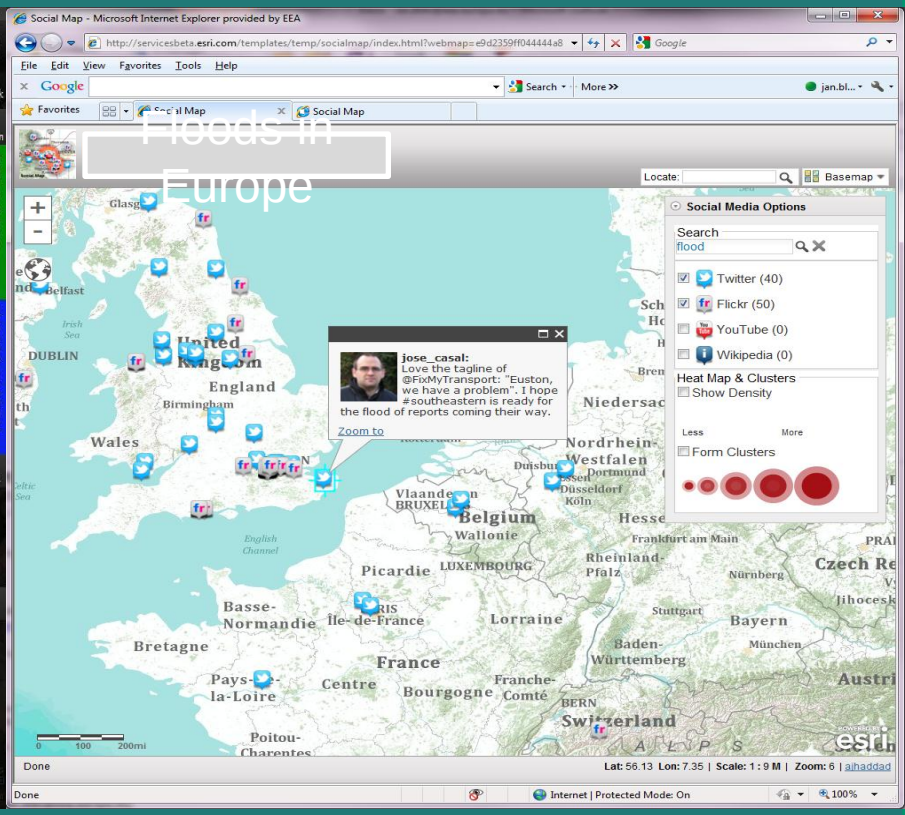
EYE ON EARTH

Integrating observations from citizen scientists and indigenous peoples



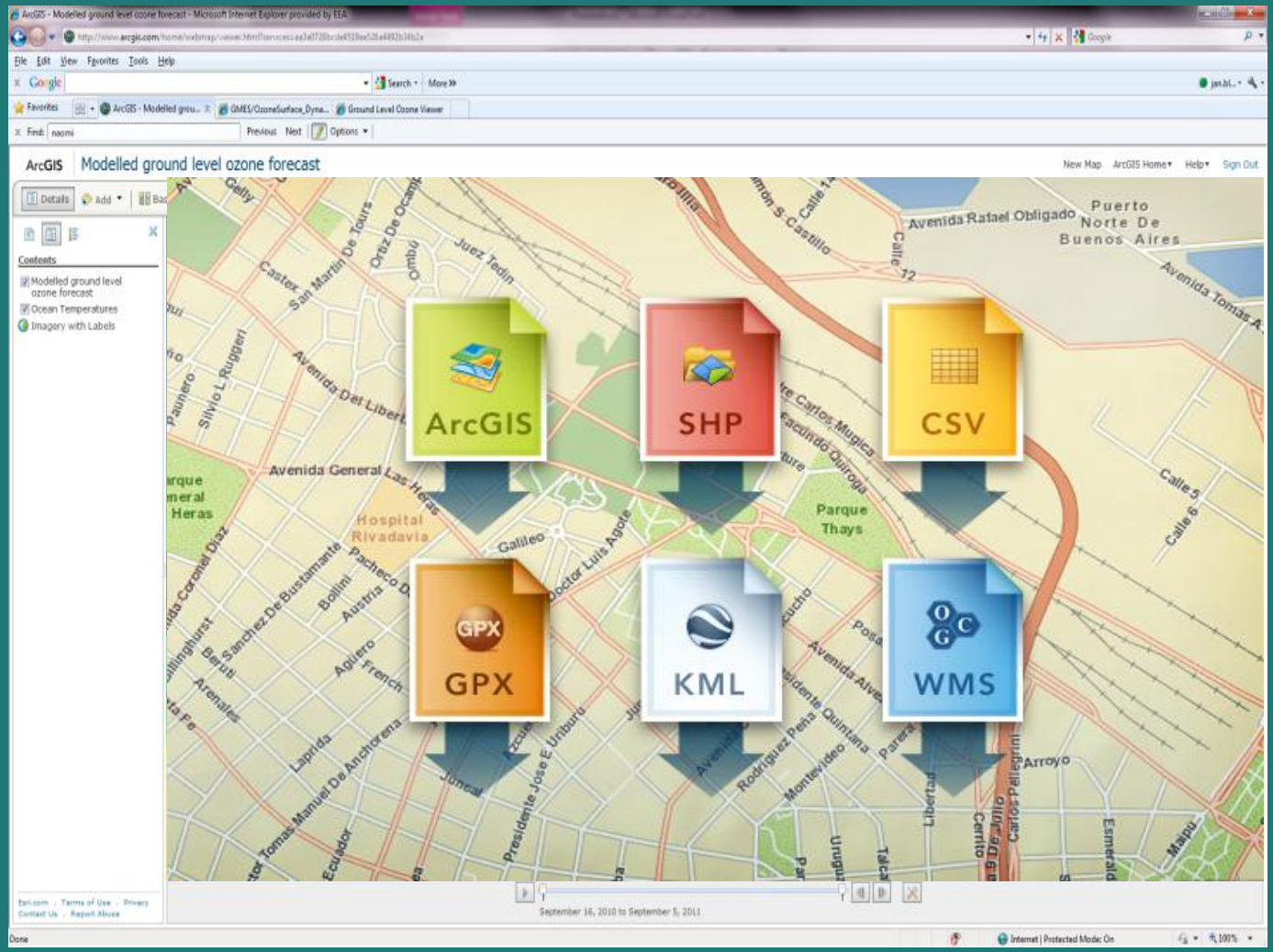
EYE ON EARTH

Social media integration

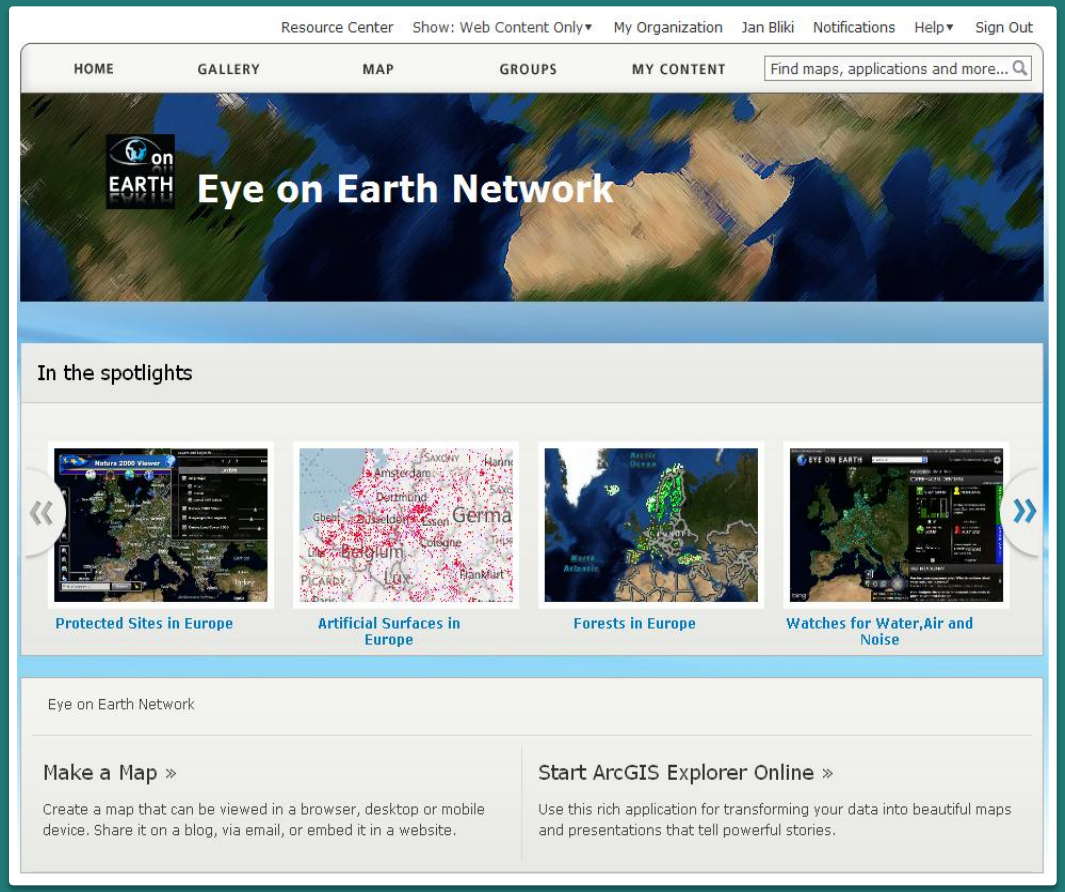


EYE ON EARTH

Drag and drop intelligent maps



Global release at the Eye on Earth summit in Abu Dhabi 12–15 December 2011



All EEA applications and available web-services

Data from UN and other international organisations

National data, including US data

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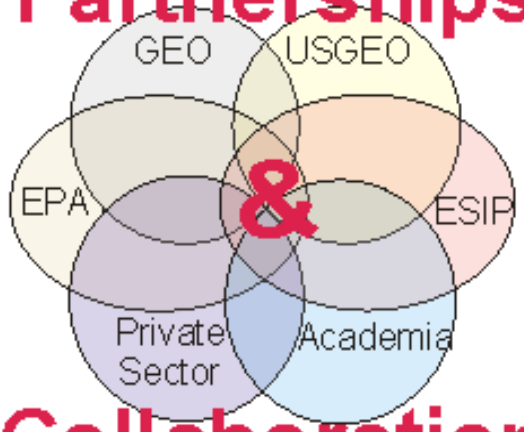

Global Movements

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Natural Resource Sustainability for Environment, Economy & Society

FROM A MOMENT TO A MOVEMENT

Representatives from government, business, science, civil society and academia came to join forces to:

- ***CONVENE*** TO CELEBRATE 'BEST-IMPACT' DATA INITIATIVES FROM AROUND THE GLOBE;
- ***CONVERGE*** ON KEY ISSUES TO REACH CONSENSUS ON SOLUTIONS TO GREATER DATA ACCESSIBILITY;
- ***COLLABORATE*** TO STRENGTHEN EXISTING INITIATIVES AND, WHERE NECESSARY, LAUNCH NEW ONES.

ABU DHABI 2011 SUMMIT

FROM A MOMENT TO A MOVEMENT

The **Eye on Earth Summit** has enabled

- global leaders,
- innovators and
- decision-makers

to **focus on an "*issue upon which our planet's future depends":***

- how to ensure ***effective access*** to the world's expanding pool of environmental and societal data by all of those who need it.

Eye on Earth: Press Headlines

- Abu Dhabi meeting approves 'Declaration of intentions' (some focused on Rio+20)
- Brazil pushes for global information convention
- Help plug data gaps, urges senior UN official
- Why city resilience will be an issue at Rio+20
- Geospatial initiative shows the way
- Information networks--bridging the gap between geeks and suits
- Quality control challenges for citizen science
- The sense and sensitivity of technology for all

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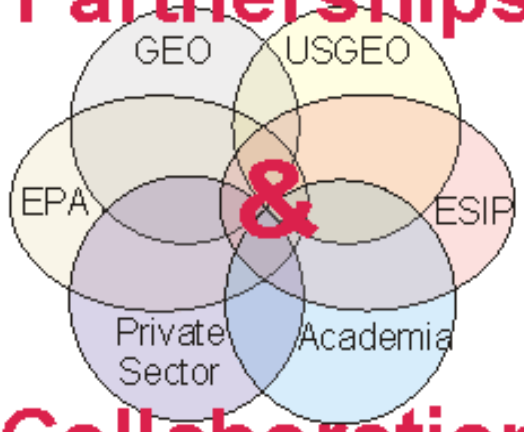

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Convene, Converge Collaborate

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Push for data access at Rio+20

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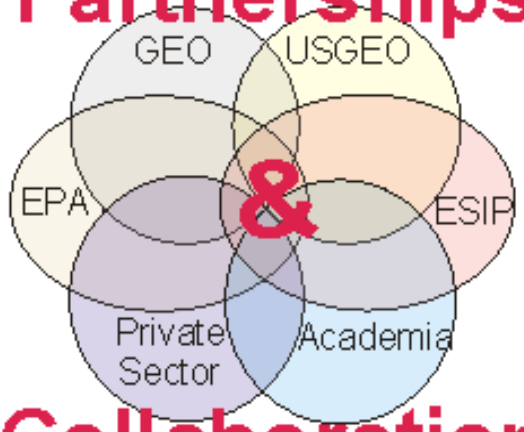

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WGs on biodiversity, blue carbon, water, disaster mgmt, urban environment work up to Rio+20.

“Those who collaborate will prosper.”
Secretary Mike Leavitt, speaking to USGEO, 2005

Thank you!